

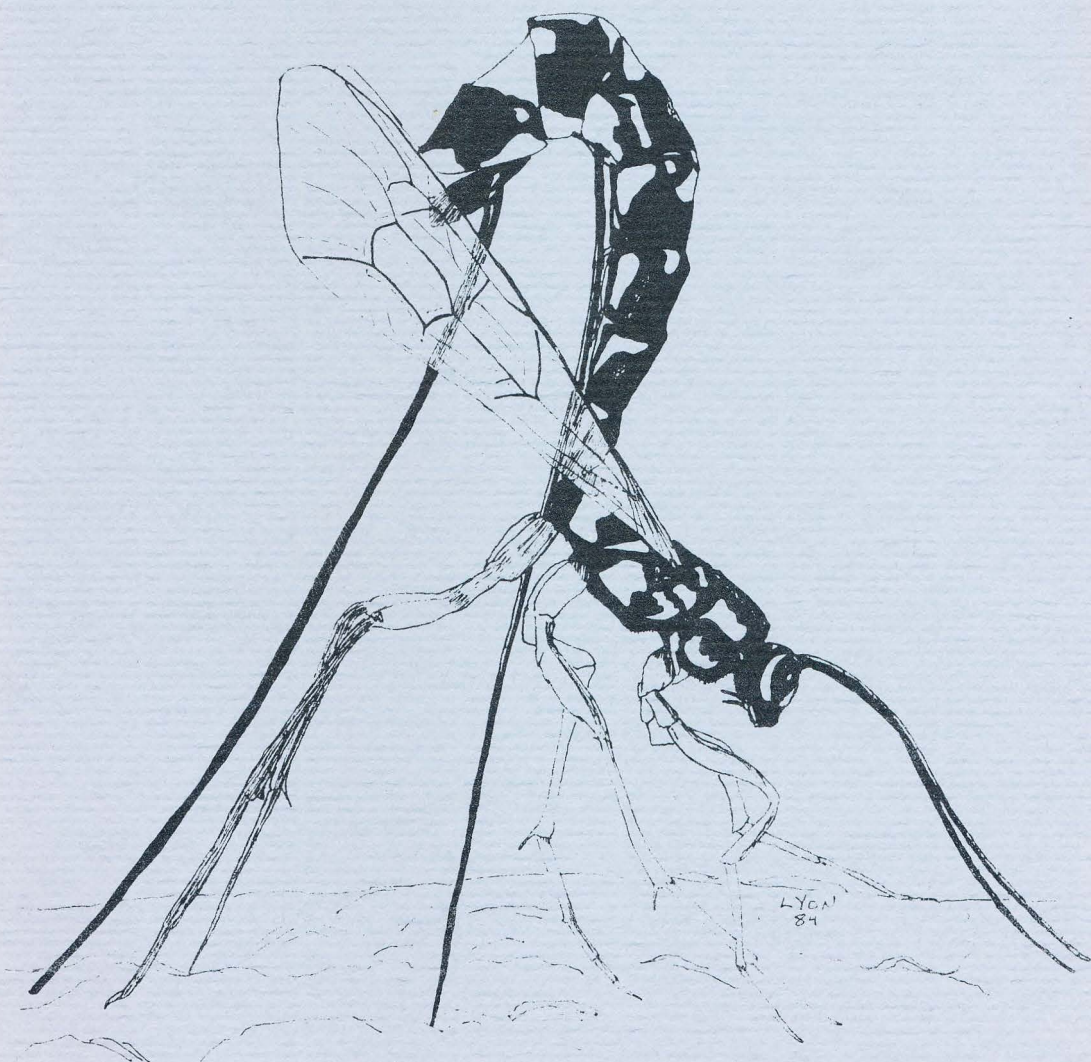
Vol. 2, No. 1

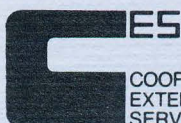
Winter 1985

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**Y.E.S.**

**QUARTERLY**



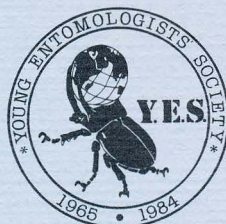


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## YOUNG ENTOMOLOGIST'S SOCIETY

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**Y.E.S. Quarterly**  
**Vol. 2, No. 1**



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## REPORT FROM Y.E.S. HEADQUARTERS

I would like to take this opportunity to bring you all up to date on recent developments in our Society. In the area of membership, we are doing quite well, I think. Just yesterday I enrolled our 303rd member! Our member renewals are coming in at a respectable rate, too. If you haven't sent yours in yet, please do so as soon as you can to assure that you continue to receive Y.E.S. Quarterly and other membership benefits. Details on our new members, two of which are sustaining members, are contained within this issue.

We have had a good responses to our request for volunteers to act as section advisors. These people will assist Y.E.S. members with their questions and other needs for information.

Y.E.S. was extensively promoted at the recent Entomological Society of America meeting in San Antonio, TX (December 1984), including a poster display on our history, mission and current status. I also had the chance to meet with some of our members, and I enjoyed the encouragement, constructive comments and ideas contained within our conversations. The kind people at Bio Quip Products, Inc (Santa Monica, CA) and American Biological Supply Co. (Baltimore, MD) have graciously agreed to distribute Y.E.S. promotional brochures with the entomological collecting kits they sell. This should expose many people to our Society, and we are most appreciative for this assistance.

One of our members, Mr. Michael Zappalorti, Sr. of Staten Island, NY, also deserves a hearty thank you for his recent donation to Y.E.S.. He has graciously given 80 specimens of exotic Coleoptera, Orthoptera, Lepidoptera, Diptera, and Arachnida for inclusion in a display that is being built to promote Y.E.S. and 4-H Youth Entomology. His donation will assure that our display catches everyone's attention.

I hope you are all having success in establishing contacts for exchanges and information with fellow Y.E.S. members. As our membership grows and becomes more diverse, I'm sure that will help assure more successful friendships. I would also like to suggest to you that writing articles about your interests, specialties, and experiences will increase your visibility and thereby increase your success in establishing contacts with other members. Everyone has something they can share, so let people in on your entomological interests and expertise.

To those persons who have been, or are soon to be, authors of articles (or illustrations, etc.) in Y.E.S. Quarterly, I'd like to bring your attention to this special offer. If you would like 2 additional, free copies of the issue(s) with your work, just drop us a note/postcard and we'd be happy to send you "reprints" of your article to show friends, family, or colleagues.

In the spirit of the New Year, I'd like to share with you my resolution for the Young Entomologists' Society. I think we should resolve ourselves to the task of doubling our membership (from 300 to 600) in 1985. This may sound difficult, but it really isn't. This goal would be easily achieved if each current member recruited one additional new member. Now that doesn't sound hard to me!

Best wishes to you all in 1985, and I hope you have an enjoyable, successful and productive year as a Y.E.S. member.

Gary A. Dunn  
Y.E.S. Advisor

#### ERRATA

Several errors were discovered in the article "Italian Tiger Beetles (Coleoptera: Cicindelidae)" by Cesare Iacovone (Y.E.S. Quarterly 1(4):19-29). The illustration on p. 19 should be labelled Cicindela littoralis remoralis (instead of C. majalis); also, the captions on figures 1 and 2 are reversed, the first (p. 24) being labrums and the second (p. 23) being the elytra.

We apologize to the author for our errors.

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## THE NATURE PLACE

Craig Odegard  
7385 Beryl Lane  
Missoula, MT 59801 USA

This summer I attended a Lepidopterist's Week at The Nature Place with 23 other people. The Nature Place is located on the 6,000-acre Big Spring Ranch which is six miles southwest of Florissant, Colorado, at an elevation of 8,640 feet. It is surrounded by beautiful spruce-pine forests and wet meadows where aspen thrive, providing the best possible opportunities for collecting Lepidoptera.

I arrived at The Nature Place shortly after noon on July 15, 1984. My family and I went into the central lodge to get the key to my cabin, and we met Tom Emmel from Gainesville, Florida. Then we went to see my room. My bed was in the loft, so I carried everything up there and then looked around the cabin. There was a nice bathroom, a fireplace, a small kitchen, and plenty of room for all my stuff, too. After looking at my room, I said good-bye to my family, went back and got my butterfly net, and began collecting butterflies. I caught two Parnassius phoebus and a Cercyonis oetus. Five minutes later, it started raining, so I went inside and got everything unpacked.

Some time around 5:00 p.m., the shuttle bus arrived from the airport with the rest of the Lepidopterists. I met my roommates, Charlie Covell and his son Robert, both from Louisville, Kentucky. I went over to the lodge while they unpacked and met Rich Worth from San Jose, California, and Jeff Gilbert from Carlisle, Pennsylvania.

After dinner, we went to a meeting in the conference room to discuss the week's activities, and then there were presentations by Tom Emmel and Charlie Covell. Tom and Charlie both had presentations every day while another instructor, Boyce Drummond, did presentations about every other day. The presentations were over at about 9:00 p.m., and I went to set up my ultraviolet collecting light. I hung a white sheet near our door and ran an extension cord out the window to where the light was, and went inside to wait until the moths started coming.

The following morning, July 16, I got up at 5:30 to check for moths. There was a gray Sphinx moth among a few other smaller moths and hundreds of spruce budworm moths (the larvae of these moths had killed thousands of spruce trees in an area about five miles to the west of The Nature Place).

After a delicious breakfast, everyone got their collecting equipment ready, and we left at about 9:00 a.m. on a hike to a series of large meadows. Even before we entered the meadows, the butterflies started to appear, although they were mostly common Cercyonis oetus. We entered the largest meadow, and I caught two variegated fritillaries (Euptoieta claudia) about 30 seconds apart. Then I walked further down the meadow to where a small creek flows into it. I crossed the creek and caught two Parnassius phoebus and a Euphydryas (probably anicia). Further down the meadow I caught a couple more Parnassius phoebus and Euphydryas, plus Coenonympha ochracea. Eventually the meadow became closed in on both sides until it was only about 25 feet across. In this area, willows and aspens grew along the creek, and we were able to catch some Limenitis weidemeyerii and some Lycaena rubidus. I was also fortunate enough to catch a black and white day-flying moth (Gnophaela sp.). At 11:30am we returned for lunch.

After lunch, we went to the Florissant Fossil Beds where there were some petrified Sequoia trees (only the stumps remained) and lots of fossils in the museum. Then we went north of Florissant to some private property where the owners allowed us to dig for fossils. We found some small insects (no Lepidoptera) and lots of leaves and twigs. We had to leave early though, because of a violent hailstorm, and only dug for half an hour. After stopping in Florissant to buy ice cream cones, we returned to The Nature Place and did some more collecting before dinner. The evening was spent watching more excellent presentations from the instructors mentioned earlier.

On Tuesday, July 17, I once again got up early to go collect moths at my ultraviolet light. There wasn't much this morning, but lots of Geometrids and spruce budworm moths. There was also a species of the family Arctiidae that was fairly common that I identified as Aemilia ambigua, and a small colorful tiger moth (Apantesis sp.).

We had an early breakfast because we were going to an area 55 miles away (northwest) of Leavick Valley, which is five to ten miles west of Fairplay, Colorado. We began collecting at the head of Fourmile Creek on the east slopes of Horseshoe Mountain and Mount Sherman at 10:30 a.m. I hiked straight up the mountain to about 500 feet below the summit of Mount Sherman which is over 14,000 feet in elevation. I caught a few Boloria titania and possibly Boloria freija. I also saw one Erebia magdalena that I couldn't catch. By 11:00, it became cloudy, so I returned to the van to eat lunch.

After lunch, I walked down the road with Tom Emmel and Rich Worth while the others stayed near and above the van. On the one mile hike down to the other van the weather improved

and I caught some fine species such as Lycaena cupreus snowi, Colias meadii, Erebia epipsodea, Cercyonis meadii, three or more species of Lycaenidae, a few common species of Hesperiidae including a nice Pyrgus sp. and some Speyeria sp. Rich Worth caught some Oeneis chryxus, although I couldn't find any of them. Around 3:00 p.m., we headed back to The Nature Place.

On Wednesday, July 18, we went to an area about three miles from The Nature Place called the Top of the World. Everyone got off the bus about one mile from the top and we walked up a creekbottom where Limenitis weidemeyerii were present in large numbers. I caught four in half an hour. I also caught some black day-flying moths (Ctenucha cressonana) in a field above where the creek begins. Also present in large numbers were Parnassius phoebus and Plebejus melissa, and in one area there was a fair amount of Colias philodice. Half an hour before our departure, I went further up the road and caught large numbers of Euphydryas anicia. I collected four perfect specimens and then it was time for lunch. Only there was one problem . . . one of the butterfly collectors was missing. And to everyone's surprise, it wasn't Charlie Covell (who was usually the last one on the bus), but another collector named Erik. We drove around a little and honked the horn alot, but still no sign of Erik. So Charlie Covell and another guy off to stay there and look for Erik while the bus left with all the hungry people. The bus returned to the Top of the World in fifteen minutes--Erik had been found.

After lunch, we went to a new area called Dome Rock Valley that was supposed to be rich in coppers, especially Lycaena rubidus. Unfortunately, it was cloudy and very few butterfly were flying. About half of the group, including myself, started to walk upstream while the other half stayed near the bus. I saw a Euptoieta claudia about 25 feet from the bus, but couldn't catch it. Finally, when we were about one-half mile upstream, we found some thistles that had some Colias sp. and Speyeria sp. along with a few blues. Rich Worth caught a perfect specimen of Lycaena heteronea on the thistles.

Then the butterflies seemed to disappear again, so I decided to cross the creek and go back downstream. About two-thirds of the way back to the bus, I stopped to look behind me to see where the other collectors were. Just as I turned around, I saw a brown butterfly go behind a big rock. I assumed it was only a common Cercyonis sp., but decided to go look anyway. It was a perfect specimen of the uncommon Riding's satyr (Neominois ridingsii)! Not a bad find, considering it is rare in that valley.

Dinner that day was a barbecue at a remote meadow about five miles from The Nature Place. Just as we were getting finished with dinner, it started raining.

Thursday, morning we left shortly after 8:30 to go to Rock Creek Canyon, four miles southwest of Colorado Springs. We arrived at 10:00 a.m., and went to look at the May Natural History Museum which contains insects from all over the world--over 100,000 butterflies, moths, beetles, and other insects. Very impressive! When as I was finished looking at the collection, I started walking up the road with a couple other people. Most collectors stayed near the museum to collect. We found lots of Gambel Oak growing along the road, and as was expected, we found Hypaurotis chrysalus, which is very common near oak trees. I caught 13 specimens. Speyeria sp. and Lycaena arota were abundant, too. Other species I collected included Cercyonis pegala boopis, Neophasia menapia, some large Hesperiidae, and some Papilios. Most other collectors took the same species, although Rich Worth's dad caught a large Catocala moth and another collector said he saw a gulf fritillary. Sometime after 3:00 p.m., we headed back for another good dinner and more evening presentations.

Friday morning we left at 9:00 to return to Leavick Valley to get butterflies that we weren't able to catch on Tuesday, I hiked up the southeast ridge of Mount Sherman and caught lots of Boloria. Then I saw what I had been hoping to find--Erebia magdalena--sitting on a rock in front of me. It was a perfect specimen and netted it easily. I saw another one flying across the rockslide above me, but decided that I wouldn't go chase it because the sun was still shining and I was sure more would come to me. I walked further up the ridge and caught some Cercyonis meadii and Colias meadii. Then some clouds started moving in, so I decided to go back down the ridge and get more Erebia magdalena before it got too cloudy. I got down to about 13,500 feet and saw some Oeneis chryxus that I couldn't catch.

A few minutes later, an Erebia magdalena flew just out of reach of my net. But that wasn't going to stop me, so I started running up the rockslide to catch it. I caught up to it, swung my net, caught it, and tripped. My right arm hit a rock when I fell and I couldn't move my wrist. I immediately assumed my arm was broken, and I was right. Luckily for me, it didn't hurt like most broken arms do, so I was able to get the Erebia magdalena into a glassine envelope and into the killing jar with my left arm while my right arm rested on my lap. Then I put my killing jar into my backpack and hiked down the mountain to the van. One of the assistants from The Nature Place put my arm in a sling and took me down the long, bumpy road to the hospital in Fairplay to get my arm X-rayed. It was indeed broken, and they said I would have to go to Colorado Springs to

get an operation to straighten the bones. We drove the 85 miles to Colorado Springs and the doctor said that I didn't need an operation, so we returned to The Nature Place. I had dinner and then went to watch the last evening presentations. Finally, to end the day, I got all my stuff packed to be ready for my flight home the next morning.

I got up early on Saturday because my flight had been changed so I could get home earlier to get a cast on my arm. After saying good-bye to everyone at The Nature Place, I went to the airport in Colorado Springs and headed home to Montana.

Despite my broken arm, I had a great time at The Nature Place. The food was great, the staff was always eager to help, and the cabins were very comfortable. Someday I hope to return to The Nature Place, but until then, my memories of the summer of 1984 in Colorado will remain with me and each butterfly or moth that I spread this winter will remind me of my new friends, my new experiences, and of course, my broken arm.

## TO A BUTTERFLY

William Wordsworth

Submitted by: Kathy Miktuk

RD #1, Box 119

Panama, NY 14767 USA

I've watched you now a full half-hour,  
 Self-poised upon that yellow flower;  
 And, little Butterfly! indeed  
 I know not if you sleep or feed.  
 How Motionless!--not frozen seas  
 More motionless! and then  
 What joy awaits you, when the breeze  
 Hath found you out among the trees,  
 And calls you forth again!  
 This plot of orchard-ground is ours;  
 My trees they are, my Sister's flowers;  
 Here rest your wings when they are weary;  
 Here lodge as in a sanctuary!  
 Come often to us, fear no wrong;  
 Sit near us on the bough!  
 We'll talk of sunshine and of song,  
 And summer days, when we were young;  
 Sweet childish days, that were as long  
 As twenty days are now.

CARABIDAE OF THE BEAVER ISLANDS  
CHARLEVOIX COUNTY, MICHIGAN

Gary A. Dunn  
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Michigan State University  
East Lansing, MI 48824-1115 USA

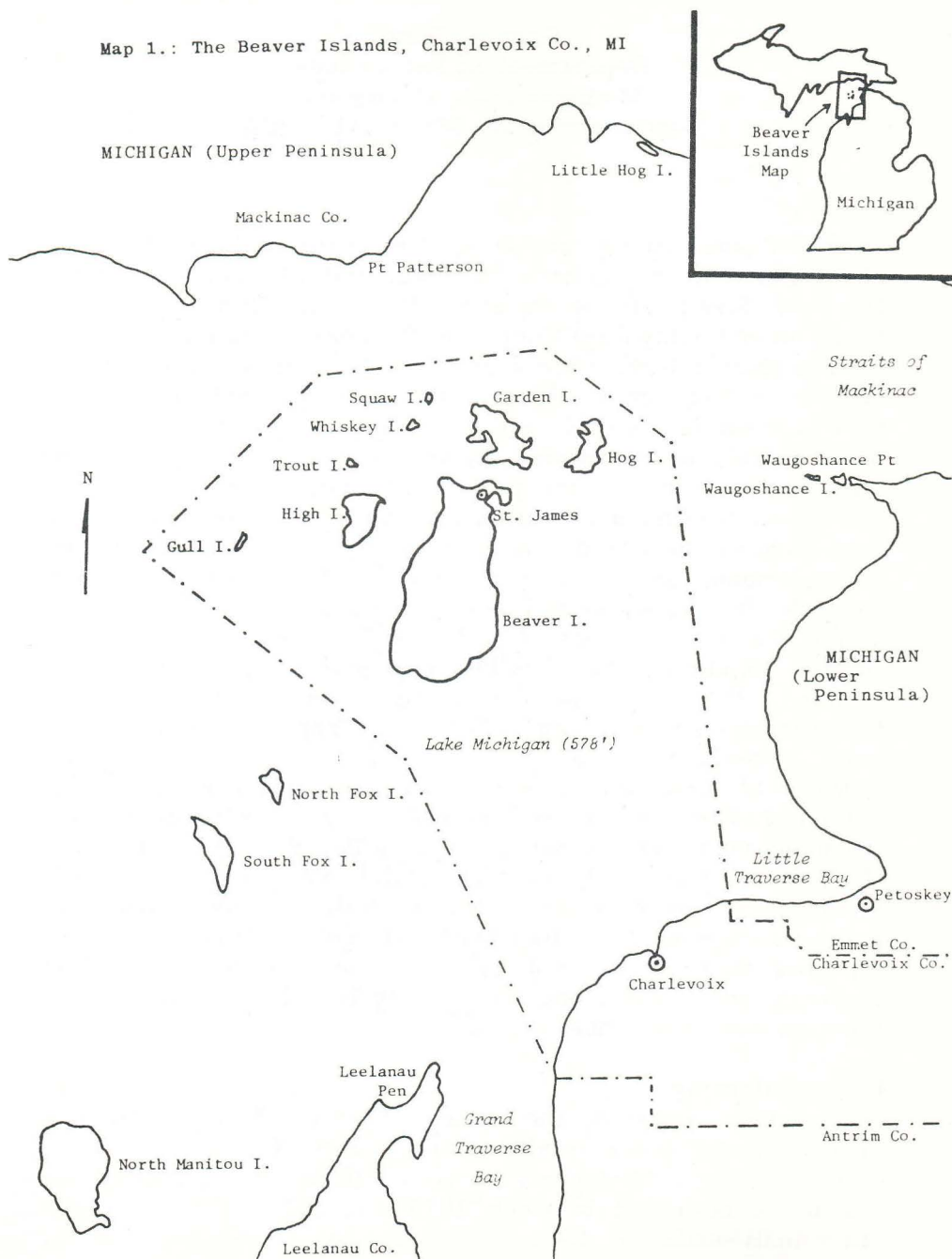
The Beaver Islands are located in northern Lake Michigan, about 300 miles northeast of Chicago and 40 miles west of the Mackinac Straits (45° 40' N and 85° 35' W). They are situated 15-20 miles (in any direction) from the nearest mainland.

The Beaver Islands are a group of 12 islands, some existing merely as large gravel bars in the shallow shoal areas. The principle islands (Map 1) are: (1) Beaver Island - 58 square miles (37,120 acres) in size (approx. 13 miles by 6 miles), the largest island in the group (and the largest island in Lake Michigan), maximum elevation 220' above the lake (578' elev.) with most of the island below 80' in elevation. The shores are variable-sand, gravel, marsh, and in the northeast corner, bedrock. It is 90% forested (beech-birch-maple, pine, and cedar swamps) and 10% "heath" (shrubby and herbaceous growth); (2) Garden Island - 7.8 square miles (4992 acres, approx. 5 miles by 2 miles), the second largest island, is mostly forested with hardwoods; (3) Gull Island - 270 acres (approx. 1 mile by 1/2 mile), densely forested interior; (4) High Island - 5.8 square miles (3712 acres, approx. 4 miles by 2 miles), the western bluff extends 240 feet above the lake and the interior is forested and has many man-made clearings; (5) Hog Island - 3.9 square miles (2496 acres, approx. 3½ miles by 1 mile), is low and wet, densely forested with black ash and cedar swamps; (6) Squaw Island - 75 acres, half forested and half heath; (7) Trout Island - 115 acres, reported to be dominated by mound ants with nests 15' in diameter and 2' high; and (8) Whiskey Island - 130 acres, 90% forested with mixed hardwoods.

### Early Collecting

The first report on the Carabidae of the Beaver Islands is given by Hatch (1924) in his article "A List of Coleoptera from Charlevoix Co., Michigan"; he lists 116 species (adjusted for synonymy) collected between 1919 and 1923 by himself and other individuals. In 1983, I spent a week at the south end of Beaver Island, and added 20 new species to the list (Dunn, 1983). To this list, I now add records from the insect collections at Michigan State University (MSU) and the Univer-

Map 1.: The Beaver Islands, Charlevoix Co., MI



sity of Michigan (UMMZ), as well as the results of my 1984 collecting. This raises the list of known Beaver Islands carabid fauna to 156 species.

### Changes in the Beaver Island Fauna

Of the new species added to the list through my collecting, many of these species have been simply overlooked by previous collectors. However, four species are new arrivals to Beaver Island, as they are old-world species that have been only recently introduced into the Great Lakes region of North America. These are Pterostichus melanarius Illiger (Dunn, 1983), Bembidion obtusum Serville, Clivina fossor L. and Trechus quadristriatus (Schrank). Five species are new by virtue of their having been described after Hatch's survey. These are Pterostichus castor Goulet, Pterostichus novus Straneo, Brachinus cyanochroaticus Erwin, Badister neopulchellus Lindroth, and Bembidion castor Lindroth. In addition, two of Hatch's records are erroneous. The Chlaenius solitarius Say are actually C. cordicollis Kirby (Dunn, 1983) and the Agonum bogmani Gyllenhal must be the related species A. obsoletum Say (since Bogmani is not known to occur east of the Rocky Mountains). Further collecting will no doubt reveal the presence of additional species.

### CHECKLIST OF BEAVER ISLANDS CARABIDAE

(incl. Cicindelinae)

1. Acupalpus pauperculus (Dejean) - Beaver Is., Gull Is. (Hatch, 1924)
2. Agonum aeroginosum Dejean - Beaver Is. (Miller's Marsh, by treading) (Dunn)
3. affine Kirby - High Is. (Hatch, 1924), Beaver Is. (UMMZ)
4. crenistriatum LeConte - Beaver Is. (Hatch, 1924)
5. cupreum Dejean - Beaver Is., High Is. (Hatch, 1924)
6. cupripenne Say - Beaver Is., High Is., Hog Is. (Hatch, 1924)
7. decorum Say - Gull Is. (Hatch, 1924)
8. errans Say - Garden Is., Hog Is., Whiskey Is. (Hatch, 1924), Beaver Is. (Hatch, 1924; Dunn, 1983)
9. gratosum Mannerheim - Beaver Is. (Hatch, 1924; Dunn, 1983)
10. lutulentum LeConte - Beaver Is. (UMMZ)
11. moerens Dejean - Beaver Is. (Dunn - at Miller's Marsh, by black light)
12. obsoletum Say - High Is. (reported as bogmani Gyll. by Hatch, 1924)
13. placidum Say - Beaver Is. (Dunn, 1983), High Is. (Hatch 1924)

14. quadripunctatum DeGeer - Beaver Is., High Is. (Hatch, 1924)
15. retractum LeConte - Beaver Is. (Dunn, by pitfall trap)
16. tenue LeConte - Beaver Is. (Dunn, 1983)
17. thoyeri Dejean - Hog Is. (Hatch, 1924), Beaver Is. (Dunn, 1983)
18. Amara apicaria Paykull - Gull Is. (Hatch, 1924), Beaver Is. (Dunn, 1983)
19. avida Say - Beaver Is., Gull Is. (Hatch, 1924)
20. convexa LeConte - Beaver Is., Gull Is. (Hatch, 1924)
21. impuncticollis Say - Beaver Is. (Hatch, 1924)
22. laticollis Kirby - Beaver Is. (Hatch, 1924)
23. littoralis Mannerheim - Beaver Is. (Hatch, 1924)
24. musculus Say - Beaver Is., Hog Is. (Hatch, 1924)
25. obesa Say - Beaver Is. (Hatch, 1924; UMMZ) Garden Is., Hog Is. (Hatch, 1924)
26. quenseli Schonherr - Beaver Is. (Hatch, 1924)
27. rubrica Haldeman - Beaver Is. (UMMZ)
28. sinuosa Casey - Beaver Is. (Hatch, 1924)
29. Amphasia sericea (Harris) - High Is., (Hatch, 1924), Beaver Is. (UMMZ)
30. Anisodactylus carbonarius Say - Beaver Is. (Hatch, 1924)
31. discoideus Dejean - High Is. (Hatch, 1924)
32. kirbyi Lindroth - High Is. Hatch, (1924)
33. nigrita Dejean - Beaver Is., Garden Is. (Hatch, 1924)
34. sanctaerucis Fabricius - Beaver Is., High Is. (Hatch, 1924)
35. Badister neopulchellus Lindroth - High Is. (UMMZ)
36. Bembidion affine Say - Beaver Is. (Hatch, 1924; Dunn, 1983)
37. americanum Dejean - Beaver Is. (Dunn, 1983)
38. carinula Chaudoir - Garden Is., High Is., Hog Is. (Hatch, 1924) Beaver Is. (Dunn, 1983)
39. castor Lindroth - Beaver Is. (Dunn)
40. concretum Casey - Beaver Is. (Dunn, in beach drift)
41. cordatum LeConte - Beaver Is. (Dunn, 1983)
42. honestum Say - Hog Is. (Hatch, 1924)
43. impotens Casey - Beaver Is. (Hatch, 1924; Dunn, 1983)
44. intermedium Kirby - Beaver Is. (Hatch, 1924)
45. levettei Casey - Beaver Is. (Dunn)
46. mimus Hayward - Beaver Is. (Dunn, 1983)
47. nitidum Kirby - High Is. (Hatch, 1924), Beaver Is. (Hatch, 1924; Dunn, 1983)
48. obscorellum Motschulsky - Beaver Is. (Dunn, 1983)
49. obtusum Serville - Beaver Is. (Dunn, in beach drift)
50. patruale Dejean - Beaver Is. (Hatch, 1924; Dunn, 1983)
51. quadrinotatum oppositum L. - Beaver Is. (Dunn, in beach drift)

52. rapidum LeConte - Beaver Is. (Dunn, 1983)
53. scopulinum Kirby - High Is. (Hatch, 1924), Beaver Is. (Hatch, 1924; Dunn, 1983)
54. transparens Gebler - Beaver Is. (Dunn, in beach drift)
55. transversale Dejean - Beaver Is. (Hatch, 1924; Dunn, 1983), High Is., Hog Is., Gull Is., Garden Is. (Hatch, 1924)
56. variegatum Say - Beaver (Hatch, 1924)
57. versicolor LeConte - Beaver Is. (Hatch, 1924; Dunn, 1983)
58. Brachinus cordicollis Dejean - Garden Is. (UMMZ)
59. cyanipennis Say - Beaver Is. (Hatch, 1924)
60. cyanochroaticus Erwin - Beaver Is. (Dunn at Miller's Marsh, by black light)
61. janthinipennis Dejean - Beaver Is. (Hatch, 1924)
62. Bradycellus badipennis Haldeman - High Is. (Hatch, 1924)
63. insulus Casey - Beaver Is. (Dunn)
64. nigrinus Dejean - Gull Is. (Hatch, 1924)
65. Calathus gregarius Say - Beaver Is., High Is. (Hatch, 1924)
66. ingratus Dejean - Beaver Is., (Dunn, 1983)
67. Calosoma frigidum Kirby - Beaver Is. (Dunn, 1983; UMMZ)
68. Carabus serratus Say - Beaver Is., High Is., Hog Is. (Hatch, 1924)
69. Chlaenius brevilabris LeConte - Beaver Is., High Is., Hog Is., Garden Is. (Hatch, 1924)
70. cordicollis Kirby - Beaver Is. (Dunn, 1983) (erroneously reported as solitarius Say by Hatch, 1924)
71. impunctifrons Say - Hog Is. (Hatch, 1924)
72. lithophilus Say - Beaver Is. (Hatch, 1924)
73. nemoralis Say - Beaver Is., Hog Is. (Hatch, 1924)
74. niger Randall - Beaver Is. (Hatch, 1924)
75. pennsylvanicus Say - Beaver Is. (Hatch, 1924; Dunn, 1983), High Is. (Hatch, 1924)
76. sericeus Forster - Beaver Is., Garden Is., High Is. (Hatch, 1924)
77. tomentosus Say - Beaver Is., High Is. (Hatch, 1924)
78. tricolor Dejean - Beaver Is., Hog Is. (Hatch, 1924)
79. Cicindela duodecimguttata Dejean - Beaver Is., High Is., Garden Is. (Hatch, 1924)
80. hirticollis shermani Casey - High Is. (Hatch, 1924), Beaver Is. (Hatch, 1924; Dunn, 1983)
81. longilabris Say - Beaver Is., High Is. (Hatch, 1924)
82. punctulata Olivier - Hog Is. (Hatch, 1924), Beaver Is.
83. repanda Dejean - Beaver Is. (Hatch, 1924; Dunn, 1983), High Is., Hog Is., Garden Is. (Hatch, 1924)
84. tranquebarica Herbst - Beaver Is., High Is., Garden Is. (Hatch, 1924)
85. Clivina fossor L. - Beaver Is. (Dunn, in beach drift)

86. impressifrons LeConte - Beaver Is. (Dunn, in beach drift), High Is., Hog Is., Gull Is. (Hatch, 1924)
87. Colliuris pennsylvanicus L. - Gull I. (Hatch, 1924)
88. Cymindis cribricollis Dejean - Beaver Is. (Hatch, 1924; Dunn, by pitfall trap)
89. pilosa Say - Beaver Is., High Is. (Hatch, 1924)
90. Diplocheila obtusa LeConte - Beaver Is. (Hatch, 1924)
91. Dyschirius globulosus Say - Beaver Is. (Dunn, 1983)
92. integer LeConte - Beaver Is. (Dunn, 1983), High Is., Gull Is. (Hatch, 1924)
93. longulus LeConte - Beaver Is., High Is., Hog Is. (Hatch, 1924)
94. Elaphrus americanus Dejean - Beaver Is. (UMMZ)
95. californicus Mannerheim - High Is., Gull Is. (Hatch, 1924)
96. fuliginosus Say - Beaver Is., Garden Is. (Hatch, 1924)
97. olivaceus LeConte - Beaver Is. (Dunn, 1983; UMMZ)
98. ruscarius Say - High Is., Gull Is. (Hatch, 1924)
99. Geopinus incrassatus Dejean - Beaver Is. (UMMZ)
100. Harpalus affinis Schrank - Beaver Is., High Is. (Hatch, 1924)
101. bicolor Fabricius - Beaver Is. (Hatch, 1924; UMMZ), Hog Is. (Hatch, 1924)
102. caliginosus Fabricius - Beaver Is. (Hatch, 1924; UMMZ: Dunn, by pitfall trap), High Is. (Hatch, 1924)
103. erraticus Say - Beaver Is., Garden Is. (Hatch, 1924)
104. erythropus Dejean - Beaver Is. (Hatch, 1924; Dunn, by pitfall trap)
105. fallax LeConte - Beaver Is. (Dunn, in beach drift)
106. faunus Say - Beaver Is. (Hatch 1924)
107. fulvilabris Mannerheim - Beaver Is. (Dunn, by pitfall trap)
108. innocuus LeConte - Beaver Is. (UMMZ)
109. laticeps LeConte - Beaver Is. (Hatch, 1924; Dunn, 1983)
110. pennsylvanicus DeGeer - Beaver Is., Gull Is., High Is. (Hatch, 1924)
111. pleuriticus Kirby - Beaver Is. (Hatch, 1924)
112. viduus LeConte - Beaver Is. (Hatch, 1924)
113. Lebia atriventris Say - High Is. (Hatch, 1924)
114. fuscata Dejean - Gull Is. (Hatch, 1924)
115. moesta LeConte - High Is., Hog Is. (Hatch, 1924)
116. solea Hentz - High Is. (Hatch, 1924)
117. viridis Say - Beaver Is., High Is., Gull Is. (Hatch, 1924)
118. vittata Fabricius - Beaver Is. (Hatch, 1924)
119. Loricera pilicornis Say - Beaver Is. (Dunn, 1983)
120. Metabletus americanus Dejean - High Is. (Hatch, 1924)
121. Microlestes linearis LeConte - Beaver Is., High Is. (Hatch, 1924)

122. Myas coracinus Say - Beaver Is. (Hatch, 1924)
123. cyanescens Dejean - Beaver Is. (Hatch, 1924)
124. Notiobia piceus LeConte - Beaver Is. (Hatch, 1924)
125. terminata Say - Beaver Is. (Hatch, 1924)
126. Omophron americanum Dejean - High Is. (Hatch, 1924), Beaver Is. (Dunn, 1983)
127. tesselatum Say - Beaver Is. (UMMZ)
128. Patrobus longicornis Say - Beaver Is., High Is., Garden Is., Hog Is. (Hatch, 1924)
129. Platynus cincticolle Say - Beaver Is. (Dunn)
130. decentis Say - Beaver Is. (Dunn, by pitfall trap), High Is. (Hatch, 1924)
131. tenuicolle LeConte - High Is., Hog Is. (Hatch, 1924)
132. Pterostichus adoxus Say - High Is. (Hatch, 1924)
133. adstrictus Eschscholtz - Beaver Is. (Hatch, 1924; Dunn, by pitfall trap), High Is. (Hatch, 1924)
134. castor Goulet and Bousquet - Beaver Is. (Dunn, at Miller's Marsh, at black light)
135. caudicalis Say - Beaver Is. (Hatch, 1924)
136. coracinus Newman - Beaver Is. (Hatch, 1924; Dunn, 1983; UMMZ), Garden Is., High Is., Hog Is. (Hatch, 1924)
137. corvinus Dejean - Beaver Is., Garden Is. (Hatch, 1924)
138. leconteianus Lutshnik - Beaver Is., Hog Is., Garden Is. (Hatch, 1924)
139. luctuosus Dejean - Garden Is. (Hatch, 1924)
140. lucublandis Say - Beaver Is. (Hatch, 1924; UMMZ), High Is. (Hatch, 1924; UMMZ), Garden Is. (Hatch, 1924)
141. melanarius Illiger - Beaver Is. (Dunn, 1983)
142. mutus Say - Beaver Is. (Hatch, 1924)
143. novus Straneo - Beaver Is. (Dunn, by pitfall trap)
144. pennsylvanicus LeConte - Beaver Is. (Dunn, by pitfall trap High Is. (Hatch, 1924)
145. tristis Dejean - Beaver Is. (Dunn, 1983)
146. Scaphinotus bilobus (Say) - Beaver Is. (MSU; Dunn, by pitfall trap)
147. Sphaeroderus lecontei Dejean - Beaver Is. (Hatch, 1924; Dunn, 1993)
148. Stenolophus comma Fabricius - Beaver Is. (Dunn, 1983); High Is. (Hatch, 1924)
149. conjunctus Say - Beaver Is. (Hatch, 1924; UMMZ), Gull Is. (Hatch, 1924)
150. lineola Fabricius - High Is. (Hatch, 1924)
151. ochropezus Say - High Is. (Hatch, 1924), Beaver Is. (Dunn, 1983)
152. plebejus Dejean - Beaver Is. (Hatch, 1924)
153. Synuchus impunctatus Say - Beaver Is. (Hatch, 1924; Dunn, 1983)

154. *Tachyta nanus* Gyllenhal - High Is. (Hatch, 1924)  
 155. *Trechus quadristriatus* (Schränk) - Beaver Is. (Dunn, in beach drift)

UMMZ = Entomology Collection, Univ. of Michigan Museum of Zoology, Ann Arbor, MI

MSU = Entomology Collection, Michigan State University, East Lansing, MI

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## THE BUTTERFLY

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Shimmering wings in the simmering sun,  
 the butterfly is having lots of fun!

Sipping nectar from a flower, I could  
 watch him for an hour.

(Editor's note: Michelle is age 7, and joined Y.E.S. just this January).

## KEEPING THE ANT LION (NEUROPTERA, MYRMELIIONTIDAE) IN CAPTIVITY

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The ant lion is a very interesting insect. The larvae feed on ants and other small insects. To capture prey, with as little

effort as possible, the ant lions construct an ingenious ant trap: a funnel-shaped pit made in loose soil or light sand. With remarkable engineering skill, the pit's walls are pitched at an angle that makes them just on the verge of stability.

The larva (Fig. 1), armed with a formidable pair of mandibles, buries itself in the pit's bottom. In time, an ant or

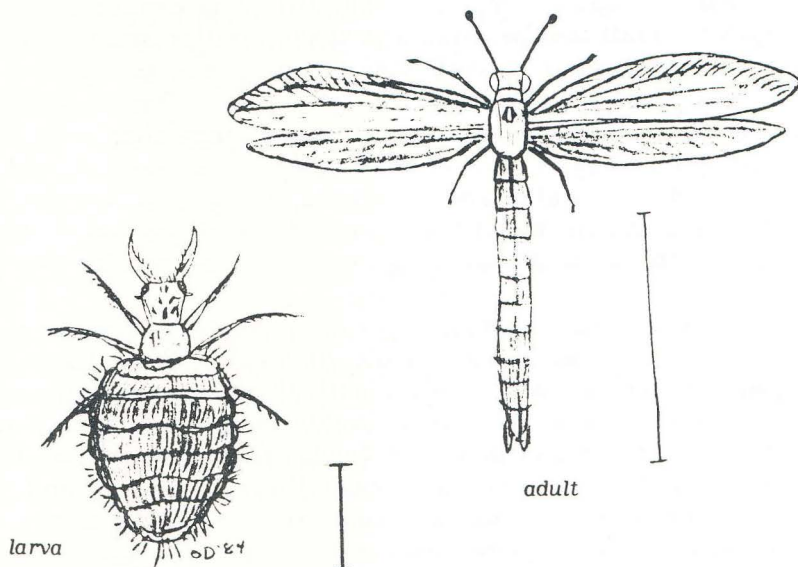


Figure 1. Ant lion, *Hesperoleon* sp.

other small insect passes too closely to the pit's steep sides. A small avalanche invariably follows, delivering the hapless prey to the ant lion's jaws. Sometimes the larva will assist the prey's demise by throwing bits of sand at it with its mandibles.

Because of their unique lifestyle, ant lions are limited in their choice of environments and must live where there is loose, dry sand. In regions such as the American Southwest this is no problem, but in less sandy regions, they can be found in sandy areas which receive protection from heavy rains. Sometimes dozens of pits can be found clustered together under a rocky ledge or cave entrance. Sometimes they can be found on the sandy shoulders of dirt roads and trails.

Larvae can be collected with a small trowel or spoon. A simple procedure is to dig up a funnel and pour the sand through a small screen (a butterfly net will work). Live larvae should be kept in separate vials. They are not known to be cannibalistic, but it is always good to play it safe with carnivorous species. A word of restraint is called for here. In the wooded North-eastern states at least, ant lion habitats are few and far

between. Therefore, I suggest that you limit the number of larvae you take, especially if the population is small.

Larvae can be kept in a shallow container, such as a plastic sweater box. This should be filled with about an inch of dry sand. Several larvae can be introduced, depending on the size of the cage. A screen or net lid is required to prevent prey insects from escaping. In captivity, ant lions can be fed with ants, aphids, small mealworms, and many similar small insects. Live food is essential. (Ant lion larvae seem to be able to survive long periods with no food whatsoever. This is probably an important adaptation to their lifestyle, since they may wait a long time for prey to fall in their trap). The sand should be lightly misted with water about twice a week. Ant lions do not seem to need much moisture. Indeed, if it becomes damp enough that the sand grains cling together, the results may be fatal.

Ant lions undergo complete metamorphosis. The pupa is formed in a spherical cocoon made of sand. When the adult emerges, it resembles a damselfly with short, clubbed antennae (Fig. 1). Occasionally they fly to lights in the summer. Some sources say that the adults do not feed, others report that they feed on flying insects. They are weak fliers, however, and any but the slowest insects would have no trouble eluding them.

Ant lions are fascinating insects that are easy to keep and fairly hardy. They require less care than many more commonly reared insects. If you are lucky enough to obtain a few larvae, they will surely prove well worth your effort.

## REARING FRITILLARIES OF THE GENUS SPEYERIA

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Rearing fritillaries can be both rewarding and frustrating. Rewarding since you can obtain perfect specimens, and frustrating because some Speyeria can be difficult to rear. Some Speyeria apparently are restricted to one species of violet, and it may be difficult to rear these on a local species of violet. The more common or widespread fritillaries are often the easiest to rear, since they have greater tolerances to temperature, humidity, foodplant, crowding, etc.

To obtain ova from a female fritillary, I usually collect a female that is slightly worn, which increases the chance of getting a mated female. From my own observations, mating

takes place very soon after the female emerges, so if you collect a very fresh female, you increase the probability of her not having mated. Also, the females with the more swollen abdomens naturally lay the most ova, so try to select a "fat" specimen if you can choose from several. Many fritillary rearers prefer to put the female in a paper sack, set in partial sunlight. However, I prefer to use a small (20 cm X 14 cm diameter) wire screen sleeve, or cage, open on the top and bottom. Cover the top with fine nylon netting. The cage can be set on a smooth surface, which will be useful later. It is not necessary to place violets in the cage, as the female will deposit ova on the screen and the netting.

One very important point: feed the female daily. Make a solution of sugar or syrup and distilled water, and fill a vial cap with it. Carefully grasp the ventral thorax of the female with thumb and index finger and use a toothpick or pin to unroll her proboscis into the sugar solution. She usually will immediately feed on her own and continue feeding until she is full (which often takes about 10 minutes). When she is done, she will withdraw and recoil her proboscis. At this point, wash her legs and proboscis under lukewarm water from a faucet. This prevents the sugar solution from drying, which may inhibit movement or future feeding attempts.

The female fritillary may live several weeks in the cage, if properly fed, and will lay several hundred eggs. When she dies, or before the eggs begin to hatch, place the entire cage into a clear plastic bag large enough to accommodate it and use a twist-tie to close the bag. Eggs laid on the smooth substrate base can be carefully scraped off with a razor blade after a few days. Depending on the species of Speyeria, eggs will often hatch in two weeks or less.

After hatching, transfer the tiny larvae to large petri dishes (no more than 50/dish) with a small artist's paint brush. I use plastic petri dishes, 15 cm diameter and 6.5 cm tall with a piece of Whatman no. 1 filter paper in the bottom to absorb moisture from the feces. Choose young, tender, violet leaves cut with about 2 cm of stem, wrap the stems in cotton and wet the cotton with distilled water. Change the filter paper daily, and replace the violets every two days. A 25- or 40-watt light bulb should be suspended about 50 cm above the petri dishes (a tall gooseneck lamp works fine) and left continuously on. This induces feeding, and the larvae won't go into diapause as they would in nature. The larvae can be kept in the dishes until the 2nd or 3rd instar, at which time they should be transferred to another type of cage.

For rearing the larvae to the pupal stage, I use 3 lb. coffee cans, filled within 8 cm of the top with sand, and then covered

with 5 cm of crushed peat moss. Put the violet stems in small vials, 6 cm tall X 1.5 cm diameter. The coffee can easily holds three or four of the vials filled with cut violets. Cut the violet leaves about 7 cm below the leaf and insert into as many as the vial will hold. Fill the vial with distilled water (a polyethylene wash bottle works fine) and push the vial into the peat until the top of the vial is level with the surface of the peat. The same cage that was used for the female can be used for the larvae, and it fits into the coffee can. Replace violets when necessary, being careful not to disturb the pupating larvae. Larvae may pupate on the nylon mesh, on the screen, under violet leaves silked together, or under the peat moss. They always hang by their cremaster.

If you wish to transfer the pupae to an emergence cage, scrape off the silken area around the base of the pupa with a razor blade, then tape it to your emergence cage. Excess larval silk of the nylon mesh and cut into small strips. The strips can be used to "stick" the cremaster of a fallen pupa back onto the silk. The silk holding the pupa can then be taped onto the emergence cage. Pupation often lasts two weeks, but also varies between species. A good emergence temperature is 75-80°F with 70% RH.

The first attempt at rearing Speyeria may be very frustrating. The larvae may die from a viral infection, pupae may desiccate, etc. But eventually you will learn and even develop techniques of your own that will be helpful. I still have a lot of trouble rearing some species of Speyeria, but I've received much guidance and help from two excellent Speyeria rearers: Rod Davis of Antioch, California, and O.D. Spencer of Lincoln, Nebraska.

## FOODPLANTS OF EIGHT NORTH AMERICAN CITHERONIINAE (LEPIDOPTERA: SATURNIIDAE).

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The following is a list of eight species of Citheroniinae (= Ceratocampidae) and their foodplants. This list is by no means complete, and it is intended solely as a guide for breeders and rearers. For information on foodplants of the Papilionidae see Albaugh (1984). This list is arranged alphabetically by scientific name.

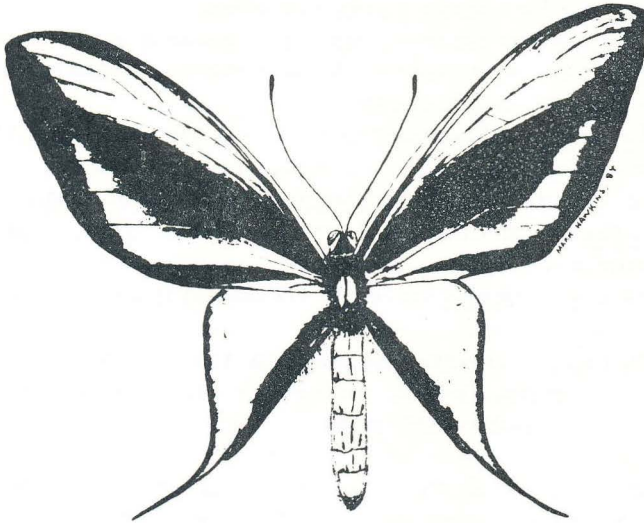
- 1) Adelocephala bicolor Harris - (honey-locust moth) - honey locust (Gleditsia), and Kentucky coffee tree (Gymnocladus).
- 2) Anisota rubicunda Fabricius (rosy maple moth) - silver maple, and red maple.
- 3) Anisota stigma Fabricius (spiny oakworm) - oak.
- 4) Anisota virginiensis Drury (pink-striped oakworm) - oak.
- 5) Citheronia mexicana Grote & Robinson (Mexican walnut moth) walnut, and hickory.
- 6) Citheronia regalis Fabricius (royal walnut moth) - smooth sumac (Rhus glabra), willow, oak, hickory, walnut, shining sumac (Rhus copallina), mountain sumac (Rhus cismontana), pecan butternut, sweet gum, ash, and persimmon.
- 7) Citheronia sepulchralis Grote & Robinson (pine devil moth) - pine.
- 8) Eacles imperialis Drury (imperial moth) - maple, sassafras, box elder, pine, beech, hickory, oak, sumac, sycamore, elm, cherry, and sweet gum.

(Editor's Note: Readers who find errors or additional information are encouraged to contact the author.

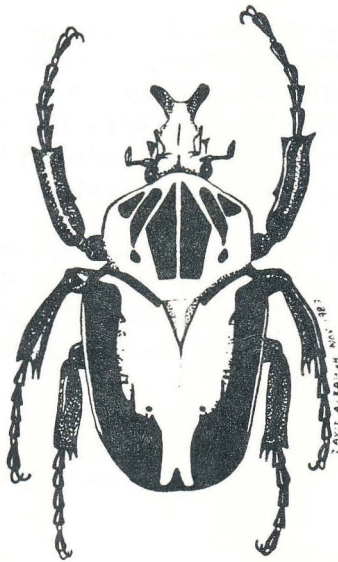
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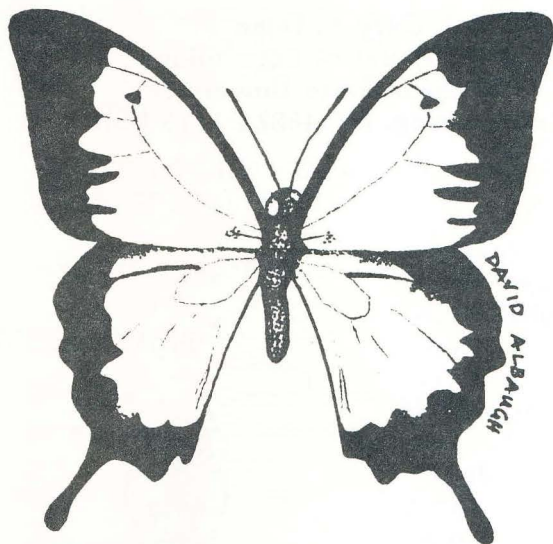
## *Insect Illustrations*



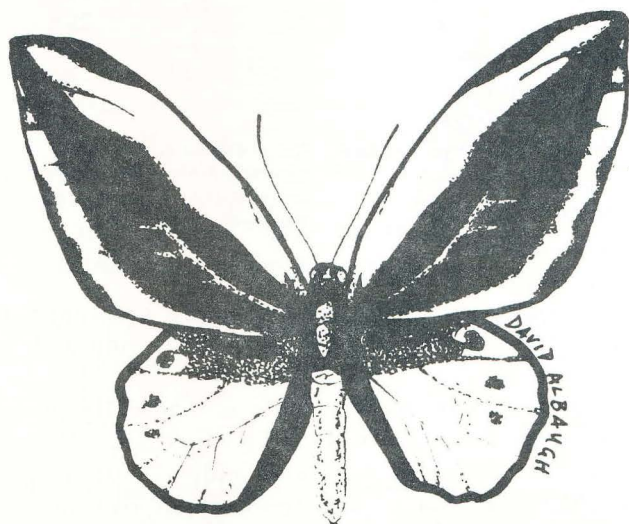
*Birdwing Butterfly: Ornithoptera schoenbergia paradisea;*  
*Mark Hawkins, 29 N. 28th St., Apt. 12E, Las Vegas, NV 09101 USA, artist.*



*Goliath beetle: Goliathus regius (male); David Albaugh,*  
*9 Columbia Ave., Jamestown, RI 02835 USA, artist.*



Swallowtail butterfly: *Papilio ulysses* (male); David Albaugh,  
9 Columbia Ave., Jamestown, RI 01835 USA, artist



Birdwing butterfly: *Ornithoptera priamus boisduvali* (male);  
David Albaugh, 9 Columbia Ave., Jamestown, RI 02835 USA, artist.

**IDENTIFICATION OF NORTH AND CENTRAL AMERICAN  
TIGER BEETLES OF THE GENUS MEGACEPHALA LATREILLE  
(COLEOPTERA: CICINDELIDAE)**

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The North American species in the tiger beetle genus Megacephala Latreille (= Tetracha Hope) are moderately sized (12-23 mm), nocturnal, predatory, flightless beetles. This genus can be distinguished from the other members of the Cicindelidae using the key given in Dunn (1984). The Megacephala are commonly attracted to lights, and can often be collected in large numbers as they run quickly and erratically across the ground. During the daylight hours they generally hide beneath stones, logs, boards and other debris and in mud cracks where they are inactive unless disturbed. However, diurnal active is not uncommon. These beetles favor moist soils and are generally found in areas near streams, roadside and irrigation ditches and mudpud-  
dles.

The Megacephala of the new world are basically tropical and subtropical in distribution, but two species, Megacephala virginica L. and M. carolina L., have widespread ranges in the United States. M. carolina occurs from coast to coast south of the 35th parallel, while virginica occurs east of the 100th meridian as far north as central Wisconsin and Connecticut. All of the other species and subspecies included in the following

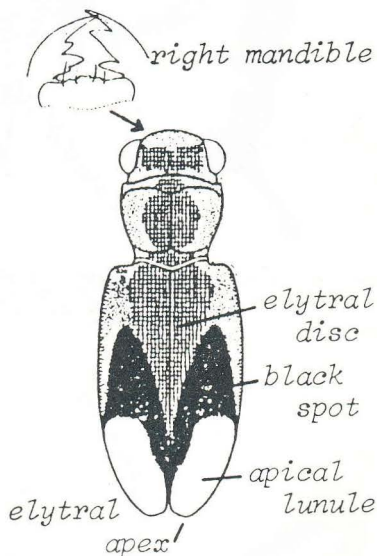


Figure 1. Generalized outline of Megacephala showing morphological features used in identification (adapted from Hummelinck, 1955).

key occur in the extreme southern United States, the West Indies or Central America.

In addition to size and color, several other morphological features are important in the identification of Megacephala species. Figure 1 illustrates these various features with a generalized specimen.

#### A KEY TO THE MEGACEPHALA OF NORTH AND CENTRAL AMERICA

1. Elytra acuminate at apex (Cuba; Hispanola) .....  
..... M. acutipennis Dejean  
Elytra not acuminate at apex .....2
2. Elytral disc black or very dark green, only lateral area brilliant green; no apical lunule (NY to IA to Gulf of Mexico) .....  
..... M. virginica L.  
Elytra colored otherwise, apical lunule present ..... 3
3. Right mandible with three apical teeth; plainly colored, blue or green, without black spot ..... M. affinis Dejean  
Subspecies:
  - a. blue, with greenish or brownish sides, coarsely sculptured (Costa Rica to Panama) .. M. affinis affinis
  - b. sooty black with greasy lustre; sides of head, thorax and elytra grassy green or blackish green; sculpture reduced (fainter and sparser) (Texas to Costa Rica) ..  
..... M. affinis angustata Chevrolat
  - c. smaller, blacker; sculpture with large, distinct punctures and without apical granulae; apical lunule narrow or tapered at anterior end (instead of broadly rounded) (southern Mexico to Belize and Guatamala) .  
..... M. affinis fuliginosa Bates
 Right mandible with 4 apical teeth; vividly colored, brilliant green with purple and black spots .....4
4. Apical part of elytra (near lunule) virtually smooth, with indistinct punctures; apical lunule rounded at apex and distinctly sinuate along inner edge; apical margin of elytra without serrations ..... M. carolina L.  
Subspecies:
  - a. dorsal area dark green, without purple color:
    1. Yucatan peninsula, Mexico .....  
..... M. carolina chevrolati Chaudoir \*
    2. Florida peninsula, USA .....  
..... M. carolina floridana Leng & Mutchler
  - b. dorsal area purplish, sides brilliant green; undersides green:

1. dark "knees" (West Indies) .....  
..... M. carolina occidentalis Klug
2. legs pale (MD to CA to Nicaragua; Cuba) .....  
..... M. carolina carolina
- c. sides of thorax and elytra with violet-blue color;  
apical lunule narrow:
  1. Oaxaca, Mexico ..... M. carolina cyanides Bates

Apical part of elytra distinctly roughened with imbricated lunules; apical margins serrate; apical lunule flattened at base and only weakly sinuate along inner edge .....  
..... M. sobrina Dejean

Subspecies:

- a. dorsal area yellow-red, separated from black spot by extension of green lateral area (Costa Rica to ..... Panama) ..... M. sobrina sobrina
- b. dorsal area purplish, in direct contact with black spot for one-half to one-third length of lunule (S. West Indies) ..... M. sobrina confusa Chaudior
- c. dorsal area copper-colored, black spot prolonged anteriorly; lunule narrow (El Salvador to Costa Rica) .....  
..... M. sobrina ignea Bates
- d. red dorsal area fused with, or masked by, black spot; lateral area narrow, brilliant green (Cuba, Hispanola) .....  
..... M. sobrina infusata Mannerheim

- \* there is evidence to suggest that chevrolati and floridana are the same subspecies with a disjunct distribution.

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## NOTES ON SOME COLEOPTERA COLLECTED IN TUNISIA

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In April 1980, I had the opportunity to visit Tunisia for an entomological expedition. Tunisia (Fig. 1) is mountainous in the north, and consists of plains and desert lands in the south. I spent most of my time collecting in costal dunes, inland dunes, and in the desert. At first glance, these lands give the impression of being barren field life, but the dune world has many inhabitants, and each one is specialized for its environment. The absence of water makes dunes suitable only for animals that are specially adapted to desert climates. The average rainfall in the desert is less than eight inches per year, and the temperature can reach 140° F in the day (dropping to 30° F at night).

The animals that live in such hostile surroundings include rodents, lizards, snakes, arachnides, coleoptera, and other insecta (which are among the most numerous). In Tunisia, and all north Africa, the number of species in April and May is extremely high compared to August and September. This is because of the lack of precipitation during this period. In fact, in mid-April, most of the Wadis (small rivers) were dry.

The entomofauna is more evident in the spring, because many insects can't withstand the high temperatures, and also because their host plants dry up or aren't present in this season. The Tenebrionidae were predominant both in areas with vegetation and also in gravel and sandy areas, and these beetles were active in all seasons. In northern Tunisia, where vegetation is abundant, many beetle species are active during the day, although nocturnal species can be found. But, in the south, nearer to the Sahara Desert, most of the species don't appear in the hostile daylight, appearing only at sunset. These crepuscular and nocturnal beetles find cover during the day in rodent holes and in the cracks of rocks. These were among the most interesting beetles I found in Tunisia.

My first days of collecting turned out to be quite poor due to bad weather. For this reason, I decided to go south, where the desert climate guarantees no rain. Proceeding south, I stopped at Zarat in Gabes Province (Fig. 1). The collecting was excellent. I collected exclusively in the dunes behind the beaches, and found the buprestid Julodis onopordi. Since this locality seemed to be extremely rich in fauna, I stayed another

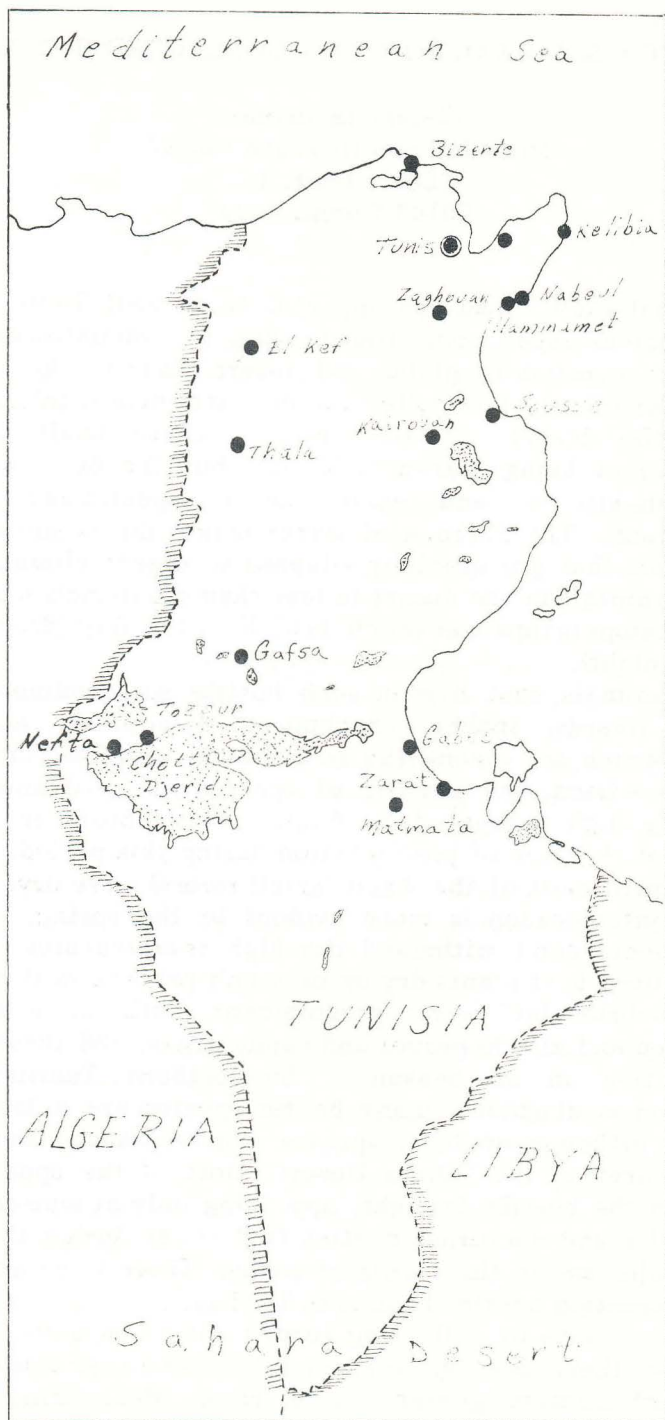


Figure 1. Map of Tunisia, North Africa.

day and found other interesting beetles, including Graphopterus serrator Forsk (Fig. 2) and Campalita olivieri Dej.

After such productive collecting, I continued south and found species from many families of insects. After visiting Nefta (Fig. 1), where some children tried to sell me a Fennecus zerda (a beautiful species of fox that lives in north Africa), I headed north. During the return trip, I crossed the oasis of "Il Hamma du Djerid" in Tozeur Province. After crossing this oasis (see Fig. 3), the view was desolate. At 6:30 p.m., I began looking for insects in this locality. The vegetation, some bushes of Graminacea, Rhamnacea, and

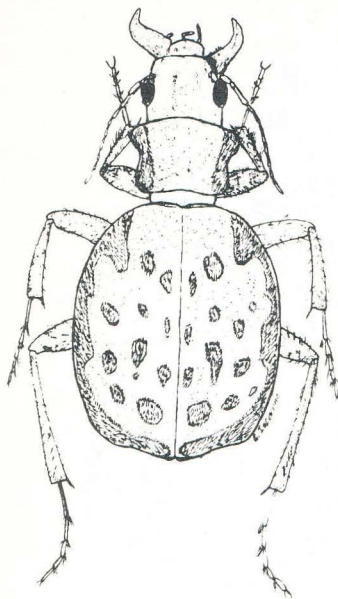


Figure 2. Graphopterus serrator Forsk.



Figure 3. Desert oasis near Matmata, Tunisia.

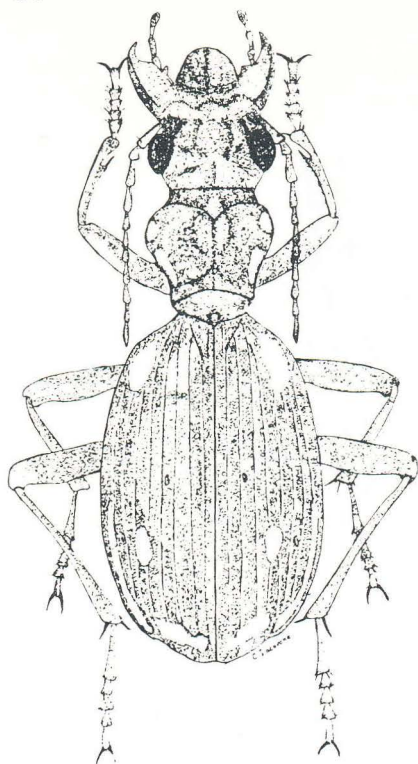


Figure 4. Thermophilum (Anthia) sexmaculatum  
Fabricius, a carabid beetle.

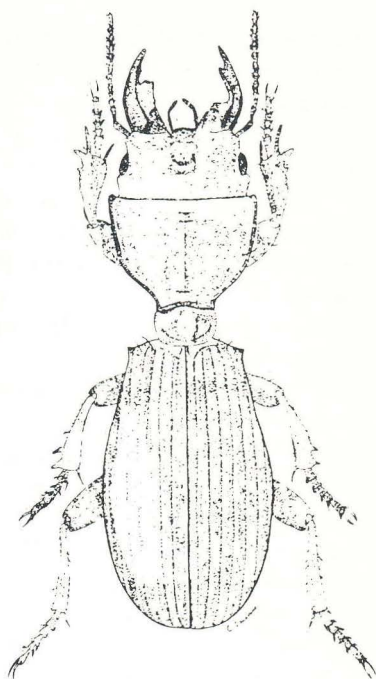


Figure 5. Scarites striatus Dejean  
(Coleoptera: Carabidae).

other types of plants was very scarce. As soon as I stepped out of the car, I saw a big carabid beetle with white spots on the elytra, running on the sand. It was very fast and difficult to capture. It was Thermophilum sexmaculatum Fabr (Fig. 4), a beautiful Anthia species (Carabidae). I also found Graphopterus serrator Forsk, some specimens of Scarites striatus Dej. (Carabidae) (Fig. 5), and many species of Tenebrionidae, including Prionotheca coronata Oliv. This tenebrionid is characterized by the spiny edges of the elytra (Fig. 6). I also collected many species of Pimelia (Fig. 7).

I captured some specimens of the Buthus species (scorpions). Along the many dry Wadis, I found many specimens of Lophyra flexuosa Fabr (Cicindelidae) and a single specimen of Lophyridia littoralis Fabr. I hoped to find the nocturnal and flightless Megacephala euphratica, but failed.

During my trip, I had the opportunity to capture many reptiles and amphibians, which I brought back to Italy alive. The most interesting was the chameleon Chamaeleo chamaeleon.

### Biological Observations

The animals that live in the desert climate and sandy soils have developed special techniques for survival. We can separate

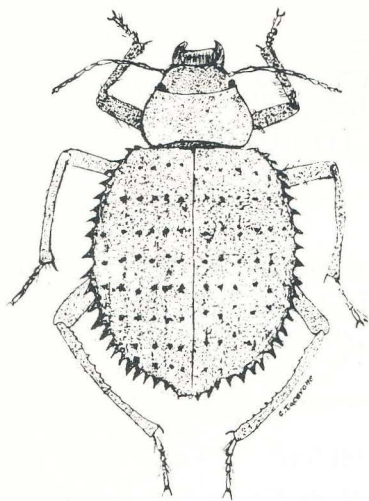


Figure 6. *Prionothea coronata*  
Olivier, a tenebrionid  
beetle.

beetle activity into daylight and crepuscular, or night, activity. During my entomological expedition, I observed the behavior of many species that I collected. I noticed, for example, a great number of Rodentia-burrows and little holes in the sand, especially at Tozeur. Rodentia-holes make excellent shelter for Coleoptera. Many species of Tenebrionidae (*Blaps* species) came out of these holes at sunset. However, many species, like *Pimelia*, *Erodius*, *Adesmia*, and *Scarites*, species, dig their own tunnels in the sand. The carabid beetle *Thermophilum sexmaculatum* prefers to take cover under various species of bushy plants. But in the summer, when these plants don't give much

cover, it burrows in the sand (Fiori 1967).

Another thing that impressed me was the great number of tracks that the insects leave in the sand. These tracks can be seen everywhere in the dunes. Each insect leaves its own track and it seems to be possible to identify the species that made it.

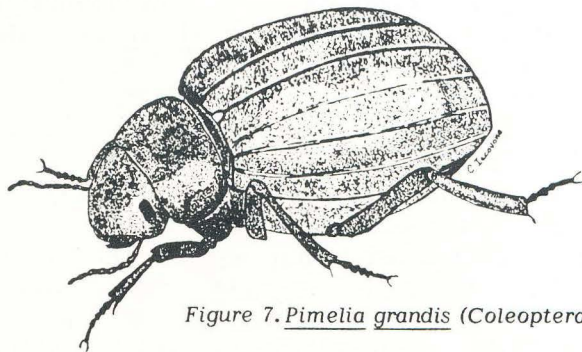


Figure 7. *Pimelia grandis* (Coleoptera: Tenebrionidae)

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- Fiori, G. 1968. Sui rifugi dei Coleotteri adulti della Tripolitania. Studi Sassarei, Sex. III, Sassari, Vol XV, fasc. 2, pp. 519-540, fig. 1-9.

## SPRING TIGER BEETLE COLLECTING IN THE SOUTHWESTERN UNITED STATES

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The main objective of this expedition was to spend several days collecting tiger beetles in and around the Death Valley region of southern California. The trip was scheduled for the early part of May, as many of the endemic tiger beetle species are active early in the season before the scorching heat of summer arrives.

I departed from East Lansing, MI on 28 April 1984, and proceeded into Colorado. The weather in the Great Plains was warm and spring-like, but when I woke up on the morning of 29 April, it was snowing. As I drove up the eastern slope of the Rockies, winter, with plenty of new snow, was all around. However, west of the Continental Divide, in the Great Basin, winter changed abruptly into summer.

I made my first collecting stop on the afternoon of 29 April. The site was along the banks of the Green River, just south of the town of Green River, Utah. Here I collected a small series of Cicindela repanda tanneri Knaus, C. tranquebarica hybrids (admiscens x kirbyi) and C. oregona guttifera LeConte. After an hour's collecting, I continued driving west across the wind and water-sculpted lands of east-central Utah, and then headed south to the Coral Pink sand dunes in extreme southern Utah (very near the Arizona border). I arrived at the Coral Pink Sand Dunes State Park late at night and set up camp in the dark.

I searched among the pink sand dunes for Cicindela limbata albissima Rumpff the following morning, but the weather failed to cooperate (it was cloudy, breezy, and cool). Despite hours of waiting and searching, I could find no beetles, and I decided to push on for southern California. I passed through the beautiful Virgin River gorge south of St. George, UT, and then headed southwest across the northwest corner of Arizona and then into Nevada. The trip across Nevada to Las Vegas was long and hot, but I was encouraged by the improving weather conditions. I drove about 70 miles north of Las Vegas, and then headed west across the desert and hills near the Nevada/California state line.

This short-cut brought me to the next collecting site--Ash Meadows. This area is most appropriately named, as the ground

is covered with a thick layer of fine, white, ash-like salt deposits. Ash Meadows is a broad, gradually-sloping basin, and is actually a part of the Amargosa River system. (This river is unusual in that it is sort of "J" shaped and begins and ends in the desert--it has no outlet and is soaked up by the thirsty ground.) When I arrived at the Meadows, there was one to two inches of standing water, with a few scattered, muddy "islands." The mud was slick, sometimes deep, and it made collecting very difficult. The predominant tiger beetle here was Cicindela senilis (amargosae Dahl x nyensis Rumpff), and the population consisted of a mixture of black and green individuals. The beetles flew from "island" to "island" and I was forced to follow them by walking through the ankle-deep water. The local livestock were not at all impressed by my skill in collecting the beetles.

On the morning of 1 May 1984, I went to a site further south along the Amargosa River, near a small town called Shoshone. Here I encountered a large population of Cicindela willistoni praedicta Rumpff and small numbers of C. tranquebarica arida Davis and C. senilis amargosae. The beetles were close to the river, where the soil was damp and the salt crust was very thin.

After several hours of collecting, I drove to Furnace Creek in the heart of Death Valley. I applied for, and received, a collecting permit to collect a small number of beetles at Salt Springs in the Death Valley National Monument. The following species were active: Cicindela willistoni pseudosenilis W. Horn, C. senilis amargosae, C. californica pseudoerronea Rumpff, and C. nevadica LeConte. The temperature was in excess of 95°F, and my enthusiasm for collecting soon wilted. I drove west across the Panamint Mountains to a place called Dirty Socks Springs, along the southern shore of Owens Dry Lake. I arrived just before sunset, and even though it was still quite warm, I found no tiger beetles.

The next morning was an entirely different story. Tiger beetles were everywhere! The beetles were most abundant where the soil was damp, and until it got hot, the beetles were sluggish and easy to catch. After about 10:30 a.m. it became quite hot, and the beetles became very active and flew long distances when disturbed. Three hours of collecting netted specimens of C. willistoni pseudosenilis, C. tenuicincta Schaupp, and C. tranquebarica inyo Fall. To give myself a break from collecting, I drove north to Klondike Lake near Bishop, CA, and collected additional specimens of C. tranquebarica inyo and one C. oregona LeConte.

My last collecting site, Soda Lake, was located just south of I-10 near Baker, CA. I was there the morning of 3 May 1984. The alkali flats were alive with C. willistoni echo Casey; there

were also a few C. nevadica, and I saw, but was not able to capture, a single specimen of C. senilis nyensis Rumpff.

Now it was time for the long trip back to Michigan--32 hours of driving. However, I had the thoughts of many fine specimens and a good suntan to remind me of the success of the trip.

## AN INSECT COLLECTOR'S DREAM

Mark Yokoyama  
1825 NW Grant  
Corvallis, OR 97330 USA

I collect insects, as you may know.  
I get them as eggs and watch them grow  
into beetles that live in trees  
or flies and bugs that crawl on rugs.

Insects are something that I know  
just about from head to toe.  
Big and little, tall and small  
but my favorite one of all  
is the Great Green Wallaboo  
the winged wonder of Chicaloo.

It crawls along the rocky sand  
in this somewhat unknown land.  
It grows two feet long at most,  
and is an unwilling host  
for many little hopping fleas  
who sometimes irritate the knees.  
After breakfast, lunch and tea  
at four o'clock (just like me)  
it goes to the pond for a little swim,  
when the water is at it's rim.

After its dry, it unfolds a giant wing  
then it looks for somebody to sting.  
So every day I stay away  
dreaming about the day  
that I catch the Great Green Wallaboo  
the winged wonder of Chicaloo.

(Editor's note: Mark is age 9, and joined Y.E.S. in the latter part of 1984).

**BIOGRAPHY: THOMAS SAY (1787-1834)**

**William O'Donnell  
3849 Kenwood Dr.  
Stow, Ohio 44224**

Thomas Say is known as the "Father of American Entomology." His name is familiar to most American entomologists since he described hundreds of species of insects, primarily beetles.

Say lived during a period of great scientific discovery in America. The United States was still young. Most of the interior of North America was poorly known, inhabited by Indians, trappers, and a few hardy pioneers. The flora and fauna of the continent were largely unknown, a vast treasure awaiting discovery.

When he was in his twenties, Say joined the fledgling Academy of Natural Sciences. Here he made something of a name for himself describing shells and crustaceans. In fact, Say is also known as the "Father of American Conchology."

Thomas Say was an adventurer in a time full of adventures. One of his first collecting trips was to the then-wilderness of Florida. This expedition was pre-empted by the Seminole Wars: the U.S. Army vs. the Seminole Indians. His experiences in Florida caused him to have some unkind opinions about the Army.

Say's opinions were not too unfavorable, however, because he accepted the Army's invitation to be the zoologist on an expedition to the Rocky Mountains. In 1819, Say accompanied an expedition designed to explore the Mississippi and Missouri Rivers. The trip was an eventful one during which their camp was raided by Pawnee Indians and then robbed by deserting soldiers.

Despite his adventures, Say accomplished much serious scientific work on his journey. Like many scientists of his day, he had the opportunity to work in several fields. He described many new insects from the West, as well as fossil shells, birds, snakes, and reptiles. In addition to his zoological work, he also helped prepare a report on Indian languages.

After his expedition to the Western frontier, Say taught for a while at the University of Pennsylvania, but soon went on another expedition to the West. Not long after this second expedition, he moved permanently to a settlement in Indiana called New Harmony, where he died at the age of 47, from fever and dysentery.

## **Review**

### **THE PESTICIDE CONSPIRACY**

**Robert van den Bosch**  
**Doubleday and Company, Inc.**  
**New York, 1978**

William O'Donnell's review (Y.E.S. Quarterly Vol. 1, No. 3, pp. 18-21) of Robert van den Bosch's book, The Pesticide Conspiracy, was quite long, had many specific references to passages in the book, and he seems to suggest by his negative comments that the book is poorly written and not worth reading. That is one opinion, and I disagree with it. In my opinion, the book is well worth reading. Although visual imagery and overstatement are used to make points in the book, I believe this adds humor and makes it more interesting. Even though how something is said can detract from the presentation, what is said can have great importance, too. Much of what van den Bosch says has the solid ring of truth to it, especially episodes of the political maneuverings and problems in the entomology department at University of California, Berkeley.

I would encourage young people not to be closed-minded, but to investigate biological control, integrated control, chemical, and cultural control, and management philosophies to gain a broad and balanced perspective of insect pest problems and their solutions.

Concerning the comment about a person "not qualified to present scholarly papers to an entomological society": the recent annual meeting of the Entomological Society of America had several such invited guest speakers. One was a congressman. They presented ideas and concepts that will shape attitudes and motivate actions.

We need to look inside ourselves. Do we intend to be responsible or irresponsible in our attitudes and actions related to pesticide use? Will we be ethical in our conduct even though it might cost less or be more convenient to be unethical?

Layne Westover  
Rm 411, Entomology Building  
Texas A & M University  
College Station, TX 77843 USA

## MEMBERSHIP REPORT

### New Sustaining Members

As of 8 January 1985, we have two new sustaining members:

H.F. Wong, Taiping, Malaysia  
Larry J. Kopp, Klingerstown, PA

### Section Advisors

The following people have volunteered as Y.E.S. section advisors after the deadline for inclusion in the 1984/1985 Y.E.S. Member Directory (Misc. Publ. No. 1):

### **LEPIDOPTERA**

Kathy Miktuk  
Road #1, Box 119  
Panama, N.Y. 14767 U.S.A.

Eric Liskey  
38857 Road 36  
Kingsburg, CA 93631 U.S.A.

Feel free to contact these members for help with Lepidoptera matters.

The following people have joined Y.E.S. after the deadline for exclusion in the 1984/1985 Y.E.S. Member Directory (Misc. Publ. No. 1). We encourage you to make note of these additions, and we hope that you will find this information useful.

The codes following the names and addresses are the same style as those used in the 1984/1985 Member Directory, and can be deciphered as follows: first coden item=member number, second coden item=abbreviation of state/country locality, third coden item=membership category (1-youth, 2-collegiate, 3-adult, 4-sustaining, and 5-institution). The numbers following the colon are the members' interest area (see Member Directory).

Lynn Braun  
Route 39, Box 128  
St. Mary's, WV 26170 U.S.A.  
283-WV-1: 11, 2, 4

Lee Cuidry  
955 Moana Drive  
San Diego, CA 92106 U.S.A.  
284-CA-3: 2, 11

Wells Dillon  
P.O. Box 28  
St. Mary's, WV 26170 U.S.A.  
285-WV-1: 11, 1, 2

Mark Khun  
1245 Conway Lane  
Reno, NV 89503 U.S.A.  
286-NV-1: 7, 8, 5

Tom W. Kral  
P.O. Box 349  
Necedah, WI 54646 U.S.A.  
287-WI-2:8

Robyn Lawson  
P.O. Box 1028  
La Quinta, CA 92253 U.S.A.  
288-CA-3: 2, 11

Dick Oliver  
P.O. Box 433  
St. Mary's, WV 26170 U.S.A.  
292-WV-1: 1, 2, 5

Chris Sigler  
Route 1, Box 97  
St. Mary's, WV 26170 U.S.A.  
294-WV-1: 10, 7, 9

Chris Spitzer  
420 Second Street  
St. Mary's, WV 26170 U.S.A.  
296-WV-1: 11, 1, 3

Tammy Templeton  
Route 2, Box 133B  
St. Mary's, WV 26170 U.S.A.  
297-WV-1: 2, 8, 10

Rene P. Wendell  
66 Sheffield Street  
Pittsfield, MA 01201 U.S.A.  
298-MA-3: 7, 8

Aimee Witten  
3402 Princeton  
Midland, TX 79703 U.S.A.  
299-TX-1: 8, 1, 7

Zeno Witten  
3402 Princeton  
Midland, TX 79703 U.S.A.  
300-TX-1: 2, 3, 11

H.F. Wang/Deco Enterprises  
P.O. Box 155  
Taiping, Perak, MALAYSIA  
301-MAL-4

Michelle Yokoyama  
1825 NW Grant  
Corvallis, OR 97330 U.S.A.  
302-OR-1: 0

Jack Zavada  
1401-B Miller  
Washington, IL 61571 U.S.A.  
303-IL-3: 7, 2, 11

#### Recent Address Changes

239-MA-3 Mark J. Mello  
New: 14 Standish Street  
Provincetown, MA 02657 U.S.A.

101-FL-3 Suzanne Kekich  
New: 500 Osceola Avenue #305  
Winter Park, FL 32789 U.S.A.

118-CA-0 Eric Liskey  
New: 38857 Road 36  
Kingsburg, CA 93632 U.S.A.

184-WI-0 Walter B. Schultz  
New: 1228 Valley Road  
Twin Lakes, WI 53181 U.S.A.

## Trading Post

WANTED: Cerambycidae from all over the world in exchange for specimens from Europe and the Soviet Union. Elvira Barchet, 6740 Clybourn Ave., #242, North Hollywood, CA 91606. Telephone (213) 761-3764.

FOR SALE OR EXCHANGE: Cocoons of A. luna, A. io lutheri, and C. promethea. SASE for prices. Will also accept desirable papered butterflies with data in exchange for cocoons. Larry J. Kopp, R. Box 30, Klingerstown, PA 17941.

FOR EXCHANGE: Will exchange many species of butterflies from Mayalasia, Philippines, Taiwan, some from Africa, Peru, Brasil, and Europe, all in A1 quality, for A1 specimens from other countries (USA, Canada, Central America, South America, Australia, Indonesia, India, etc.). Exchange preferred, but can also buy. Please write to Patrick M. Malesieux, 87, rue Delhaye 59 148 Flines les Raches, FRANCE.

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FOR SALE: Paul Villiards' Moths and How to Rear Them. Limited supply. \$8.50 includes postage. Dr. Barry Persky, 103-18 Ave. M, Brooklyn, NY 11236 USA.

TO EXCHANGE OR PURCHASE: N.A., Neotropical Lepidoptera ova, pupae and cocoons. Offer in exchange fine exotic material. M. Zappalorti, Sr. 123 Androvette Street, Staten Island, NY 10309 USA.

WANTED: Worldwide Cicindelidae in trade for worldwide Lepidoptera. Willing to give several different or same species depending on type of Cicindelidae. All letters welcome. Contact: Ryan Bridge, 4329 Old Orchard Rd., York, PA 17402.

WANTED: Information on how to receive Atticus atlas formosanus ovae, larvae, or pupae. Contact: Ryan Bridge, 4329 Old Orchard Rd., York, PA 17402. (All letters answered.)

WANTED: Cicindelidae and Carabidae (Carabus, Cychrus, Scaphinotus, Calosoma, Anthinae only) species and literature. Worldwide beetles available of all families. Cesare Iacovone, Via G. Noventa #12, Scala I - int. 3, 00143 Roma, ITALY.

FOR SALE: A-1 papered S. diana, males and females. Write to: Jevetta B. Florence, Rt 2, Box 40, Cox's Creek, KY 40013 USA.

WANTED: Live larvae of any tiger beetles and live true katydids, both female and male. Will pick up anywhere and pay for the catch and phone call. Glenn Firebaugh, 3636 Hoiles, Toledo, Ohio 43612. (419) 478-8314.

# TRADING POST (continued)

WANTED: Correspondence to exchange information on common indoor spiders. Will identify specimens from the urban-suburban areas of your city (daddy-long-legs not included). Write to: Steven Gades, 1410 West Dunkerton Rd., Waterloo, IA 50703 USA.

FOR SALE: Large selection of papered Malaysia Butterflies, beetles, and other insects, all of A1 quality with data. Free catalog available from: DECO ENTERPRISE, P.O. Box 155, TAIPING, Malaysia.

HELP AVAILABLE: To Y.E.S. members, ages 17 and up, collecting in the vicinity of Oviedo, Florida, northeast of Orlando. Housing, microscope, and library available with local Y.E.S. member. For more information, contact the Y.E.S. Trading Post.

WANTED: To exchange Scarabaeidae (especially Rutelinae and Melolonthinae) from the United States, Mexico, Central and South America. All correspondence welcomed. Delbert A. La Rue, 3894 McKenzie Street, Riverside, CA 92503.

FOR SALE: Antheraea polyphemus cocoons. Abundant supply. 80¢ includes postage; discount for large orders. Write: Jeff Miller, 550 Conifer Way, Ashland, OR 97520.

WANTED: Diapheromera femorata and Megaphasma denticrus eggs. Egg cases of Mantis religiosa, Stagmomantis carolina, and Tenodera aridifolia. Write to Jeff Miller, 550 Conifer Way, Ashland, OR 97520.

WANTED: Cocoons of any Saturniid moths. Write to: Jeff Miller, 550 Conifer Way, Ashland, OR 97520.

WANTED: Ovae and pupae of Lepidoptera, especially Saturniidae, Papilionidae, and Nymphalidae. Willing to buy. Send lists and prices to: David Albaugh, 9 Columbia Avenue, Jamestown, RI 02835 USA.

WANTED: All books, new or used, pertaining to entomology, especially, Lepidoptera, Coleoptera, Orthoptera, and general entomology. Send lists and prices to: David Albaugh, 9 Columbia Avenue, Jamestown, RI 02835 USA.

WANTED: All pairs of the following Lepidoptera: Papilio polyxenes, Papilio bairdii, Papilio zelicaon, Papilio indra, Papilio palamedes, Papilio cresphontes, Papilio glaucus (including dark female), Papilio troilus, Speyeria diana, Junonia coenia, Nymphalis milberti, Limenitis arthemis, Limenitis archippus, Limenitis weidemeyerii, Limenitis lorquini, Limenitis astyanax, Philosamia cynthia, Hyalophora gloveri, Hyalophora euryalis (rubra), Hyalophora columbia, Callosamia angulifera, Citheronia regalis, and Eacles imperialis. Send lists and prices to: David Albaugh, 9 Columbia Avenue, Jamestown, RI 02835 USA.

WANTED: Information on foodplants of Nymphalidae, Satyridae, Saturniidae, and Sphingidae for a series of articles to appear in the Y.E.S. QUARTERLY. Any contributions will be helpful and greatly appreciated. David Albaugh, 9 Columbia Avenue, Jamestown, RI 02835 U.S.A.

WANTED: Used stereo microscope for under \$100.00. Also interested in corresponding and trading with SE and SW United States, Spain, and New Guinea members. Dennis Lipinski, 1133 Wade St., Aliquippa, PA 15001, USA.

# TRADING POST (continued)

WANTED: Books and literature about ants, bumblebees, wasps, hornets, and bees. Search list on request. All letters answered and postage refunded. Contact: H. Thomas, Zeppelinstr. 31, CH-8057 Zurich, Switzerland.

FOR SALE: Insect Pins: Std. Black, Elephant, Stainless Steel, Minutens and Label Pins. Sizes 000 thru 7 available. For complete list write: Ianni Butterfly Enterprises, P.O. Box 81171, Cleveland, OH 44181.

FOR SALE: Worldwide collectible butterflies, beetles and rare insects, named with data. For subscription to butterfly and beetle price lists send \$5.00 to Ianni Butterfly Enterprises, P.O. Box 81171, Cleveland, OH 44181.

WANTED: Blow flies (Calliphoridae) on loan or for exchange from various regions of the U.S. (particularly the southwest), as part of a study of the distribution of these insects. All material sent will be identified and returned, except for a few specimens retained for the I.D. service. Blow flies are easily collected from raw fish or carrion baits. Send material to Donald Baumgartner, 150 S. Walnut St., Palatine, IL 60067.

TRADE: Western (Calif. & Nevada) butterflies for U.S. noctuid moths. Write for details: Ron Robertson, 362 Scenic Ave., Santa Rosa, CA 95407

FOR SALE OR TRADE: Livestock of many species of moths including H. cecropia, H. euryalis, H. gloveria, D. pholus, etc. Write for complete list: Chris Conlan, 1630 Milan Ave., South Pasadena, CA 91030.

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FOR SALE: Neotropical insects from northern Central America, or will EXCHANGE same for Catocala (Lepidoptera: Noctuidae) especially from Europe, N. Africa, USSR, Central Asia, China or Korea. Also, SELL glassine envelopes in 3 convenient sizes; take fountain pen and stamp pad ink well. Eduardo C. Welling M., Apartado Postal 701, Merida, Yucatan, Mexico.

PUBLICATIONS AVAILABLE: "Les Punaises Terrestres (Heteropteres: Geocorises) du Quebec," "Manuel d'identification des Carabidae du Quebec" and Fabriques (Journal). Write Association des Entomologistes Amateurs du Quebec, C. . 52, Sillery, Quebec, GIT 2P7 Canada.

WANTED: Eggs, pupae or adults of Polyphemus moths for a living exhibit at community nature center. Donations gladly accepted or purchase can be arranged. Mike Koslosky, Naturalist, reek Nature, 1801 "D" Street, Hayward, CA 94541 USA.

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